

Amendments to the Specification:

Page 8, line 10

Using the generalized scalar function, a column environment is simulated for the row, such as row 6, that is an argument for the generalized scalar function, via step 104. Simulating the column environment allows the row, such as row 6, that is an argument for the generalized scalar function to appear to the corresponding column function as a column. Stated differently, the generalized scalar function takes the row data for the row input to the generalized scalar function and provides the row data to the corresponding conventional column function such that the corresponding column function can use the data. Also in step 104, the row that is an argument for the generalized scalar function is provided to the corresponding conventional column function in the column environment. In other words, the generalized scalar function may call the corresponding conventional column function and provide to the corresponding conventional column function the row data in a manner that allows the corresponding column function to use the row data as if the row were a column. For example, in one embodiment, this may include providing the data from a row, entry by entry, to the column function. In the example above, finding the minimum of row 6, the generalized scalar function may provide to the column function the data from each entry in row 6 for each column 2, 3, 4, and 5. The column function would receive entry 11 (from column 2), entry 12 (from column 3), entry 13 (from column 4), and entry 14 (from column 5) from the generalized scalar function. The generalized scalar function may function in an analogous manner when multiple rows are to be used. In the example above, finding the minimum for rows 6, 7, and 8 Thus, the conventional column function receives data from each row 6, 7 and 8 as though each row 6, 7 and 8 is a column. The conventional column function performs its operations on the rows 6, 7 and 8

provided to the column function in the column environment to return outputs, via step 106.

Thus, the conventional column function functions as it normally would in step 106. In the minimum examples described above, the resultant of step 106 would be the minimum of row 6 or the minimum of rows 6, 7 and 8. Thus, using the method 100, the column function can be performed for the indeterminate number of entries in one or more of the rows 6, 7 and 8. In the method 100, the generalized scalar function provides the entries in the row(s) to the corresponding column function in a manner that allows the corresponding column function to use the data, thereby simulating a column. The conventional column function then operates on the (simulated) column. This allows the column function to operate on a row having an indeterminate number of entries without rewriting the column function.